UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

August 15, 1984

Robert Iuliucci, Esq.
Sun Chemical Corporation
4605 Este Avenue
Cincinnatti, OH 45232

Dear Mr. Iuliucci:

Pursuant to your request, I am enclosing copies of sampling results related to the Carroll Products site in Wood River Junction, Rhode Island.

Please note that the enclosed does not include EPA's results from this agency's most recent sampling inspection; it does, however, include Carroll Products' analysis of split samples taken at the same time. Please call me next week to arrange your receipt of EPA's data.

Sincerely,

Lauren Stiller Rikleen

Lauren Stiller Rikleen
Assistant Regional Counsel

R. I. Analytical Laboratories, Inc.
SPECIALIZING IN ENVIRONMENTAL ANALYSIS
231 ELM STREET
WARWICK, R. I. 02888
PHONE: (401) 467-2452

CERTIFICATE OF ANALYSIS

REPORT TO: Carroll Products Inc.
Box 66, Route 91
Wood River Junction, RI 02894
Attn: Mrs. Donna Brown

DATE RECEIVED: 4/03/84 @ 4:15 pm
DATE REPORTED: 4/30/84
PURCHASE ORDER NO.: 04003
R.I.A.L. INV. NO.: D1150

SAMPLE DESCRIPTION: Five (5) monitoring wells, two (2) lagoon, and one (1) sump

Subject samples have been analyzed by our laboratory with the following results:

PARAMETER	DEEP WELL	ACTIVE LAGOON*	INACTIVE LAGOON*
Antimony	<0.2 mg/l	<4 ppm	<4 ppm
Arsenic	<0.01 "	<1 "	<1 "
Beryllium	0.009 "	0.24 "	0.43 "
Cadmium	0.009 "	<0.1 "	4.7 "
Chromium	<0.05 "	18 "	342 "
Copper	0.04 "	46.5 "	150 "
Lead	<0.05 "	91.3 "	4,320 "
Mercury	<0.0005 "	22 "	0.78 "
Nickel	0.09 "	19 "	20.7 "
Selenium	<0.01 "	<2 "	<2 "
Silver	<0.01 "	3.2 "	0.6 "
Thallium	<0.1 "	<2 "	<2 "
Zinc	0.711 "	150 "	1,170 "

*Sediment sample results on dry weight bassis.

Semi-volatile Organic Compounds:

Bis(2-ethylhexyl)phthatate	100 ppb	----	----
Pesticides & PCBs	ND	----	----

A list of other semi-volatile organic compounds tested for and their detection limits is attached.

APPROVED BY: Anthony E. Perrotti

Certificate of Analysis

Carroll Products, Inc.
April 30, 1984
Number #D1150

PARAMETER	DEEP	WELL-1	WELL-2	WELL-3	WELL-4	ACTIVE	INACTIVE	SUMP
Volatile Organic Compounds:								
methylene chloride	367	187	13,600	ND	4	440	155	20
trans-1,2-dichloroethylene	ND	ND	ND	ND	2	ND	ND	ND
trichloroethylene	ND	ND	3	ND	11	ND	ND	ND
chlorobenzene	ND	ND	26	ND	ND	ND	17	ND
benzene	ND	ND	ND	ND	ND	2,550	ND	ND
Detection Limits:	50	1	1	5	1	50	50	1

Note: Results in ppb

A list of other volatile organic compounds tested for and detection limits is attached.

Methodology:
1. Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, revised March 1983.
2. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd Edition.
3. Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, U.S EPA-600/4-82-057,July 1982

R.I. ANALYTICAL LABORATORIES, INC.

VOLATILE ORGANIC PRIORITY POLLUTANTS

EPA NO.	COMPOUND
2*	acrolein
3*	acrylonitrile
4	benzene
6	carbon tetrachloride
7	chlorobenzene
10	1,2-dichloroethane
11	1,1,1-trichloroethane
13	1,1-dichloroethane
14	1,1,2-trichloroethane
15	1,1,2,2-tetrachloroethane
16	chloroethane
19	2-chloroethylvinyl ether
23	chloroform
29	1,1-dichloroethylene
30	trans-1,2-dichloroethylene
32	1,2-dichloropropane
33	trans-1,3-dichloropropene
33	cis-1,3-dichloropropene
38	ethylbenzene
44	methylene chloride
45	chloromethane
46	bromomethane
47	bromoform
48	bromodichloromethane
49	trichlorofluoromethane
50	dichlorodifluormethane
51	dibromochloromethane
85	tetrachloroethylene
86	toluene
87	trichloroethylene
88	vinyl chloride

Detection Limit: See Page -2-
*Detection Limit: 100 times those indicated on Page -2-

SEMIVOLATILE ORGANICS

EPA NO.	COMPOUND
*21	2,4,6-trichlorophenol
*22	p-chloro-m-cresol
*24	2-chlorophenol
*31	2,4-dichlorophenol
*34	2,4-dimethylphenol
*57	2-nitrophenol
*58	4-nitrophenol
**59	2,4-dinitrophenol
**60	4,6-dinitro-o-cresol
*64	pentachlorophenol
*65	phenol
1	acenaphthene
5	benzidine
8	1,2,4-trichlorobenzene
9	hexachlorobenzene
12	hexachloroethane
17	bis(chloromethyl)ether
18	bis(2-chloroethyl)ether
20	2-chloronaphthalene
25	1,2-dichlorobenzene
26	1,3-dichlorobenzene
27	1,4-dichlorobenzene
28	3,3'-dichlorobenzidine
35	2,4-dinitrotoluene
36	2,6-dinitrotoluene
37	1,2-diphenylhydrazine
39	fluoranthene
40	4-chlorophenyl phenyl ether
41	4-bromophenyl phenyl ether
42	bis(2-chloroisopropyl)ether
43	bis(2-chloroethoxy)methane
52	hexachlorobutadiene
53	hexachlorocyclopentadiene
54	isophorone
55	naphthalene
56	nitrobenzene
61	N-nitrosodimethylamine
62	N-nitrosodiphenylamine
63	N-nitrosodi-n-propylamine

SEMIVOLATILE ORGANICS -- continued

EPA NO.	COMPOUND
66	bis(2-ethylhexyl)phthalate
67	butyl benzyl phthalate
68	di-n-butyl phthalate
69	di-n-octyl phthalate
70	diethyl phthalate
71	dimethyl phthalate
72	benzo(a)anthracene
73	benzo(a)pyrene
74	3,4-benzofluoranthene
75	benzo(k)fluoranthene
76	chrysene
77	acenaphthylene
78	anthracene
*79	benzo(g,h,i)perylene
80	fluorene
81	phenanthrene
*82	dibenzo(a,h)anthracene
*83	indeno(1,2,3-cd)pyrene
84	pyrene

Detection Limit: 10 ppb
*Detection Limit: 25 ppb
**Detection Limit: 250 ppb

PESTICIDES/PCBs

EPA NO.	COMPOUND
89	aldrin
90	dieldrin
91	chlordane
92	4,4'-DDT
93	4,4'-DDE
94	4,4'-DDD
95	α-endosulfan
96	β-endosulfan
97	endosulfan sulfate
98	endrin
99	endrin aldehyde
100	heptachlor
101	heptachlor epoxide
102	α-BHC
103	β-BHC
104	γ-BHC (Lindane)
105	δ-BHC
106*	PCB-1242 (arochlor 1242)
107*	PCB-1254 (arochlor 1254)
108*	PCB-1221 (arochlor 1221)
109*	PCB-1232 (arochlor 1232)
110*	PCB-1248 (arochlor 1248)
111*	PCB-1260 (arochlor 1260)
112*	PCB-1016 (arochlor 1016)
113*	toxaphene

Detection Limit: 10 ppb
*Detection Limit: 100 ppb

VOLATILE ORGANIC PRIORITY POLLUTANTS

COMPOUND

*acrolein
*acrylonitrile
benzene
carbontetrachloride
chlorobenzene
1,1-dichloroethane
1,2-dichloroethane
1,1,1-trichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
chloroethane
2-chloroethylvinylether
chloroform
1,1-dichloroethylene
1,2-trans-dichloroethylene
1,2-dichloropropane
1,3-dichloropropene
ethylbenzene
methylene chloride
methyl chloride
methyl bromide
bromoform
dichlorobromomethane
trichlorofluoromethane
dichlorobromomethane
chlorodibromomethane
tetrachloroethylene
toluene
trichloroethylene
vinyl chloride
bis chloromethyl ether

Detection limit: 1 ppb
*Detection limit: 100 ppb

R.I. Analytical Laboratories, Inc.

SPECIALIZING IN ENVIRONMENTAL ANALYSIS

231 ELM STREET
WARWICK, R. I. 02888

PHONE: (401) 467-2452

CERTIFICATE OF ANALYSIS

REPORT TO: Carroll Products Inc.
Box 66, Route 91
Wood River Junction, RI 02894
Attn: Mrs. Donna Brown

DATE RECEIVED: 4/05/84 cp
DATE REPORTED: 4/30/84
PURCHASE ORDER NO.: 04016
R.I.A.L. INV. NO.: D1173

SAMPLE DESCRIPTION: Two (2) aqueous samples

Subject samples have been analyzed by our laboratory with the following results:

PARAMETER	SAMPLE #3	SAMPLE #4
Volatile Organic Compounds:		
methylene chloride	10 ppb	8 ppb

A list of other volatile organic compounds tested for and their detection limits is attached.

Note: Sample #3 - designated as Meadowbrook, South of Rt. 91, just before going under railroad tracks (3/20/84).

Sample #4 - designated as Meadowbrook, South of Rt. 91, just before going under railroad tracks (4/04/84).

Methodology: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-79-020, revised March 1983.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

APPROVED BY: Anthony F. Perrotti


Ellis Flats
Alton
Wood River Junction
Carol Proposed
WELL 637
639
692
NARRAGANSETT
NEW HAVEN
Cedar Swamp
Burdickville
from:
U.S.G.S
Carolina, RI
Quadrangles

Carrol Products

Table 1

Sample	Location	Compound		Concentration
74127	Well 639	None detected Conductivity		81 μ ohms/cm
74128	Well 637	Trichloroethylene Tetrachloroethylene Cyclohexene 2,3,4 Trimethyl-2-Pentene	 Present Present	5.7 PPB 8.4 PPB 1-2 PPB *
74130	Well 642	1,1 Dichloroethylene 1,1,1 Trichloroethane Tetrachloroethylene Conductivity		5.9 PPB 203 PPB 119 PPB 4900 μ omhs/cm
74131 **	Carrol Products' Water Tower Well	Methylene Chloride Toluene Cyclohexene	 Present	58 PPB 14 PPB 15-30 PPB *

Detection Limits - 1.0 PPB

** Sample 74131 concentrations are less than actual groundwater levels due to a highly aerated sample from well pump.

* Only rough estimate for concentration, no standard ion available to quantitate.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: February 17, 1982

SUBJECT: Carrol Products, RI

FROM: Daniel S. Granz D.S.G.
Environmental Engineer

TO: Michele Travers
Enforcement

Listed below are the metal analyses results from the October 20, 1981 sampling survey.

Sample	Location	Parameter	Concentration (ppb)
74128	Well 637	Mercury	0.2K
		Arsenic	2K
		Selenium	2K
		Copper	2
		Nickel	20K
		Cobalt	5
		Cadmium	2
		Zinc	20
		Lead	20
		Beryllium	2K
		Barium	100K
		Chromium	20K
74131	Carrol Products Well	Mercury	0.2K
		Arsenic	2K
		Selenium	2K
		Copper	8
		Nickel	20K
		Cobalt	2
		Cadmium	2
		Zinc	38
		Lead	20
		Beryllium	2K
		Barium	100K
		Chromium	20K

K -less than

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

February 19, 1982

Groundwater Sampling at
Carrol Products

Daniel Granz
Environmental Engineer

Michele Travers
Enforcement

Attached you will find the extractable organic analyses from the October 20, 1981 survey. Only samples #74128, #74130, and #74131 were analyzed. These were wells 637, 642, and Carrol Products, respectively. After talking to the analyst, it is our best judgment that only sample #74131 contained significant contaminants. ← 637

Sample	Location	Compound	Concentration
74131	Carrol Products Well	Chlorocyclohexane	Present
		4-methyl benzene sulfonamide	Present

The C-9 alcohol is a common, naturally occurring compound. Also, the adipates and phthalates are commonly found to be laboratory contaminants.

Att.

CONCURRENCES								
SYMBOL	WS	WS						
SURNAME	Granz	Travers						
DATE	2/19/82	2/15/82						

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Received 2/10/82

Date: 1-26-82

Subject: Analysis of extractables from Carrol Products # 74128,74130;74131 and Resolve # 74870

From: Richard Siscanaw, Chemist RS

To: John Conlon, Chief of OH&M
Thru: Edward Taylor, Chief of Chemistry Section ET

Analytical Procedure:
Federal Register Vol.44#233, Method 625, Dec. 3, 1979

Method of Quantitation:

Internal Standard

Date Samples Received by Laboratory: 10/81

Date Samples Analyzed: 1/82

Additional Comments:
Quality control consisted of a blank and a 100ppb spike in sample # 74131

Spiked component	% Recovery
phenol	81
2,4,6-trichlorophenol	165
4-nitrophenol	75
2,6-dinitrotoluene	174
hexachloroethane	92
di-n-butyl phthalate	91
chrysene	122

EPA FORM 1320-6 (REV. 3-76)

DATA REPORT SHEET
Base-Neutral Extractables

Date 1-26-82
Instrument HP GC/MS 5985
Analyst R. Skeanaw

Sample Number	74128	74130	74131	74870	.	. .
Compound	Ion for Quant.	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l
Acenaphthene						
Acenaphthylene						
Anthracene						
Benzo(a)anthracene						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Benzo(a)pyrene						
Benzo(g,h,i)perylene						
Benzidine						
Bis(2-chloroethyl)ether						
Bis(2-chloroethoxy)methane						
Bis(chloromethyl)ether						
Bis(2-ethylhexyl)phthalate			*	*		
Bis(2-chloroisopropyl)ether						
4-Bromophenyl phenyl ether						
Butyl benzyl phthalate						
2-Chloronaphthalene						
4-Chlorophenyl phenyl ether						
Chrysene						
Dibenzo(a,h)anthracene						
Di-n-butylphthalate						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
1,2-Dichlorobenzene						
3,3'-Dichlorobenzidine						
Diethylphthalate						
Dimethylphthalate						
2,4-Dinitrotoluene						
2,6-Dinitrotoluene						
Dioctylphthalate						
1,2-Diphenylhydrazine						
Fluoranthane						
Fluorene						
Hexachlorobenzene						
Hexachlorobutadiene						

* Not quantitated because of possible laboratory contamination

Detection Limit 5 ppb

DATA REPORT SHEET
Base-Neutral Extractables

2

Date 1-26-82
Instrument HP 5985 GC/MS
Analyst R. Siscanaw

Sample Number	74128	74130	74131	74870		
Compound	Ion for Quant.	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l
Hexachloroethane						
Hexachlorocyclopentadiene						
Indeno(1,2,3-cd)pyrene						
Isophorone						
Naphthalene						
Nitrobenzene						
N-Nitrosodimethylamine						
N-Nitrosodi-n-propylamine						
N-Nitrosodiphenylamine						
Phenanthrene						
Pyrene						
2,3,7,8-Tetrachlorodibenzo-p-dioxin						
1,2,4-Trichlorobenzene						
	TENTATIVELY IDENTIFIED					
	C_4-Alcohol	C_4-Alcohol	C_4-Alcohol	C_4-Alcohol		
		di-octyl adipate	chloro cyclohexane	di octyl adipate		
			bis 2 ethyl hexyl phthalate	bis 2 ethyl hexyl phthalate		

Detection limit = 5 ppb

* , not quantitated because of possible lab. contamination

DATA REPORT SHEET
Acid Extractables

Date 1-26-82
Instrument HP 5985 GC/MS
Analyst R. Sisenaw

Sample Number	74128	74130	74131	74870		
Compound	Ion for Quant.	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l
4-Chloro-3-methylphenol						
2-Chlorophenol						
2,4-Dichlorophenol						
2,4-Dimethylphenol						
2,4-Dinitrophenol						
2-Methyl-4,6-dinitrophenol						
2-Nitrophenol						
4-Nitrophenol						
Pentachlorophenol						
Phenol						
2,4,6-Trichlorophenol						
	TENTATIVELY IDENTIFIED					
	C_6-Alcohol		C_6-Alcohol	C_6-Alcohol		
	bis-2-ethyl hexyl phthalate		bis-2-ethyl hexyl phthalate	bis-2-ethyl hexyl phthalate		
			4-methyl benzene sulfonamide			

Detection Level - 2 ppb

DATA REPORT SHEET
Pesticide Extractables

Date 1-26-82
Instrument HP 5985 GC/MS
Analyst R. Siscanow

Sample Number	74128	74130	74131	74870		
Compound	Ion for Quant.	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l	Conc. ug/l
Aldrin						
a-BHC						
b-BHC						
d-BHC						
g-BHC						
Chlordane						
4,4'-DDD						
4,4'DDE						
4,4'DDT						
Dieldrin						
Endosulfan I						
Endosulfan II						
Endosulfan Sulfate						
Endrin						
Endrin Aldehyde						
Heptachlor						
Heptachlor Epoxide						
Toxaphene						
PCB-1016						
PCB-1221						
PCB-1232						
PCB-1242						
PCB-1248						
PCB-1254						
PCB-1260						

Detection Limit - 10 ppb

UNITED STA[redacted]N IRONMENTAL PROTECTION [redacted] Laurie R.

DATE: July 17, 1981

SUBJECT: RCRA Sampling Inspection
at Carrol Products

FROM: Daniel S. Granz
Environmental Engineer

TO: Michele Travers
Enforcement

On May 7, 1981, Michele Travers (Enforcement), Richard Enander (State), Lori Rikleen (Legal Review), Grace Crooker (S & A), and I conducted a RCRA Inspection at Carrol Products in Wood River Junction, Connecticut.

There were five samples taken. Donna Olsen from Carrol Products was present during sampling and split samples were given to her. Sample #50638 was dry soil from the dry lagoon. Sample #50639 was sediment from the entrance of the active lagoon and sample #50640 was liquid from the same location. Sample #50641 was a liquid from an open pit which contained a dark purple liquid. Sample #50642 was a wet soil sample from the disposal area behind the "Tin Shed" (mixing house), which contained the drainage from inside this building.

EPA's Regional Chain-of-Custody procedures were followed for the collection and storage of the samples. The analyses were done by EPA's Lexington, Laboratory.

Results:

Only volatile organics were analysed from the soil and sediment samples. Volatile organics and metals were analysed from the liquid samples #50641. Table I summarizes the data.

Benzene was found in high concentration in the sediment of the active lagoon. The soil in the spill drainage disposal area behind the "Tin Shed" contained high concentrations of Chloroform, Toluene, Xylenes, and significant contamination problem was identified on this site. Further sampling would be required to obtain the extent of contamination on site and if any pollutiants have migrated off site.

Attached: CP Soil Sample results

A FORM 1320-6 (REV. 3-76)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE August 4, 1981

SUBJECT: Carrol Products, R.I.

FROM: Daniel S. Granz
Environmental Engineer

TO: Michele Travers
Enforcement

Below you will find additional data on samples #50639, #50638 and #50642. These soil samples were scanned by x-ray fluorescence and the metals found were then quantified by atomic absorption.

Sample	Location	Compound	Concentration
50638	Dry Lagoon	Lead	16,000 PPM
		Zinc	6,100 PPM
50639	Active Lagoon	Lead	110 PPM
		Zinc	200 PPM
50642	Disposal Area Behind "Tin Shed"	Lead	210 PPM
		Zinc	700 PPM

The dry lagoon contains a very high concentration of lead. There was no visible plant growth on the soil in the dry lagoon, even though no discharge has occurred to this area for many years. I suspect the lack of plant growth on the dry lagoon soil due to the toxic level of lead present.

EPA Form 1320-6 (Rev. 3-76)

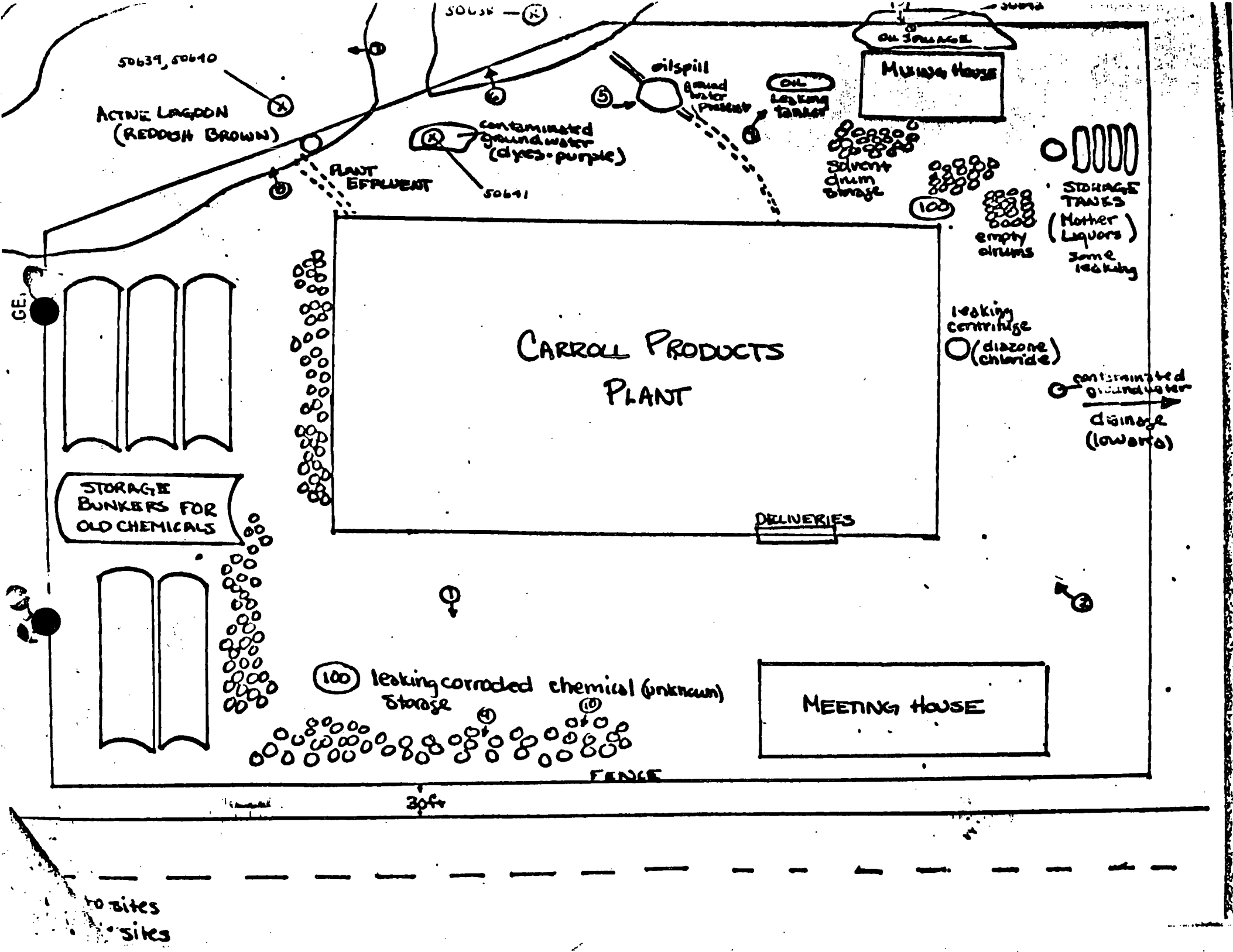

50639, 50640
ACTIVE LAGOON (REDDISH BROWN)
50638
oilspill
ground water present
OIL SPILLAGE
MEETING HOUSE
OIL leaking tanker
contaminated groundwater (dyes - purple)
50641
PLANT EFFLUENT
solvent drum storage
STORAGE TANKS (Mother Liquors) some leaking
empty drums
100
CARROLL PRODUCTS PLANT
leaking centrifuge (diazone chloride)
contaminated groundwater
drainage (towards)
STORAGE BUNKERS FOR OLD CHEMICALS
DELIVERIES
100 leaking corroded chemical (unknown) storage
MEETING HOUSE
FENCE
30ft
to sites
sites

Table 1

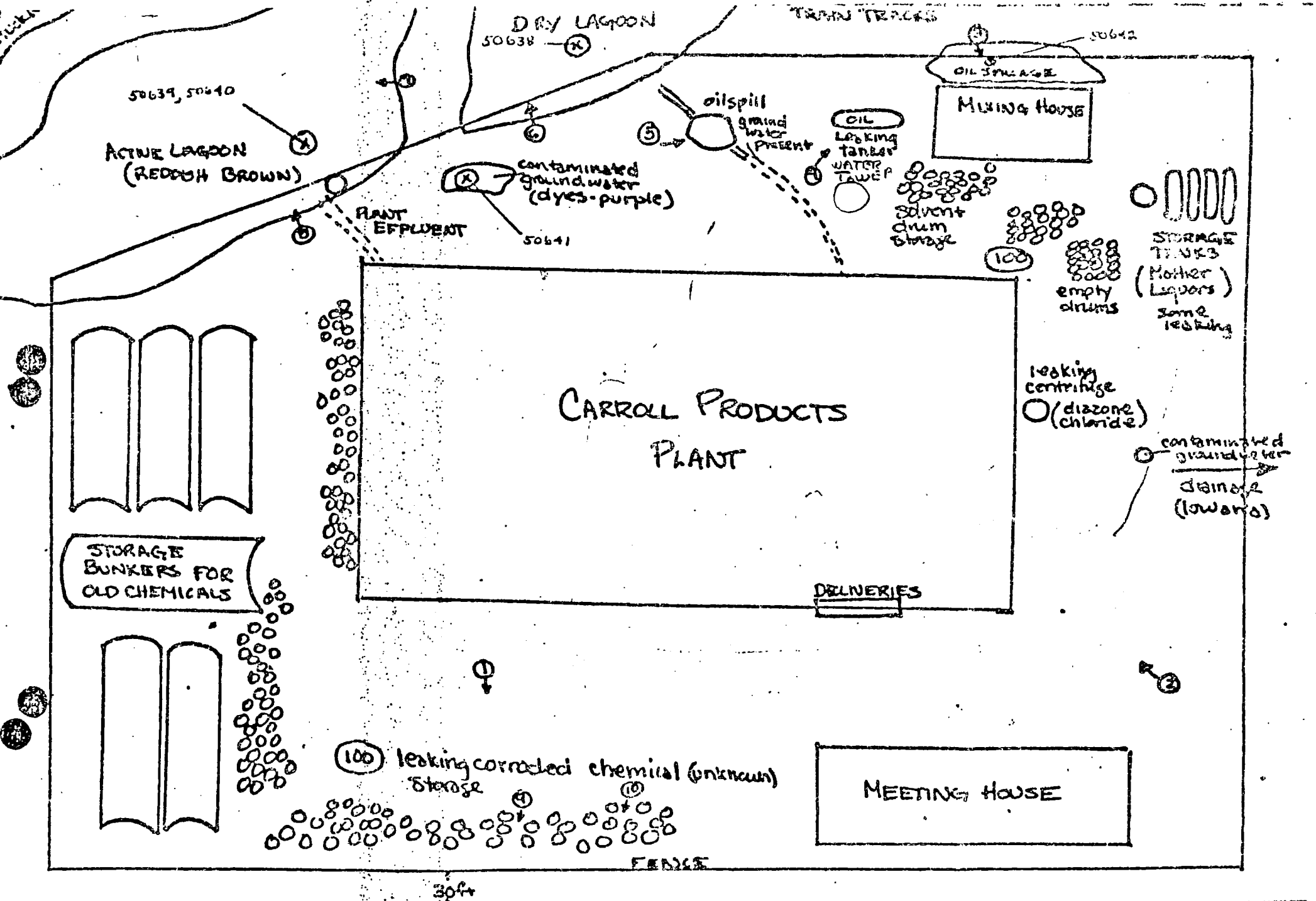
Sample	Location	Compound	Concentration
50638	Dry lagoon (sediment)	Trichloroethylene	17 PPB
		C-8 Alkane	present
50639	Active lagoon (sediment)	Methylene Chloride	640 PPB
		chloroform	18PPB
		Benzene	4,500 PPB
		Tetrachloroethylene	4* PPB
		Toluene	21 PPB
		Chlorobenzene	19 PPB
		Xylenes	12 PPB
		C-6, C-7, C-8, Alkanes	Present
50640	Active lagoon (liquid)	Methylene Chloride	130 J PPB
		Carbon Tetrachloride	6 J PPB
		Benzene	14 J PPB
		Tetrachloroethylene	1 J* PPB
		Toluene	69 J PPB
		Chlorobenzene	3 J* PPB
		iron	Present
		Copper	Present
		Zinc	Present
50641	Open Pit (liquid)	Benzene	5J* PPB
		Toluene	9J* PPB
		Trichlorotrifluoroethane	Present
		Iron	Present
		Zinc	Present
		Bromine	Present
50642	Disposal Area behind "Tin Shed" (sediment)	Chloroform	9,700PPB
		Benzene	970* PPB
		Toluene	3,000 PPB
		Chlorobenzene	1200* PPB
		Xylene	9,700 PPB
		C-6 Alkanes	Present

J - Approximation because of Matrix interferences

* - Concentration is lower than the approximate detection level because of the compc response factor and/or a decrease of interferences in the sample's chromatogram.

Detection Levels for samples

50638	15 PPB
50639	15 PPB
50640	5 PPB
50641	10 PPB
50642	2000 PPB


DRY LAGOON
50638
TRAIN TRACKS
50642
OIL SPILLAGE
MIXING HOUSE
50639, 50640
ACTIVE LAGOON
(REDDISH BROWN)
oilspill
grainal water present
OIL
leaking tanker
WATER TOWER
contaminated groundwater (dyes-purple)
PLANT EFFLUENT
50641
solvent drum storage
STORAGE TANKS (Mother Liquors) some leaking
empty drums
CARROLL PRODUCTS PLANT
leaking centrifuge (diazone chloride)
contaminated groundwater
drainage (towards)
STORAGE BUNKERS FOR OLD CHEMICALS
DELIVERIES
leaking corroded chemical (unknown) storage
MEETING HOUSE
FENCE
30ft